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Science and Technology for Tomorrow's Aerospace Forces

Success Story

TORNADO WARNING SYSTEM TONE ALERT RECEIVER



Researchers from the Sensors Directorate designed and fabricated an in-house, electronic radio frequency receiver that responds to Wright-Patterson Air Force Base's (AFB's) tornado alert broadcast, giving personnel added time to reach an emergency shelter. Directorate personnel in several different locations on base can now receive tornado warnings in a timely manner and seek safety in designated shelters.



Air Force Research Laboratory
Wright-Patterson AFB OH

Sensors
Emerging Technologies

Accomplishment

Directorate researchers developed a Warning System Tone Alert Receiver (TAR) that reduces emergency notification time for directorate personnel. One of the more unique features that differentiates the Warning System TAR from similar TARs is the integrated, flashing red light and buzzer, which gives visual and audible cues that the receiver has detected a tornado alert broadcast.

Background

The Wright-Patterson AFB 88th Air Base Wing Command Post uses radio signals to activate sirens during tornado warnings or other severe weather conditions. Previous weather alerts highlighted a significant deficiency in the base notification system to alert the directorate within a reasonable time after initiating the weather warning.

The Wright-Patterson AFB Command Post used the Simultaneous Alert System telephone network for previous notifications. Generally, this occurred 8-10 minutes after activating the base sirens. The sighting of a storm within the proximity of Wright-Patterson AFB, coupled with the time delay of notification and personnel movement to the shelters, made it apparent that a disaster could occur prior to directorate personnel reaching their shelter.

Directorate personnel developed two prototype Siren Detection Sensor (SDS) receivers to recognize coded waveforms transmitted on a very high frequency base disaster channel. The SDS receivers detect the base siren tones inside the directorate's building and alert personnel of severe weather in the area of Wright-Patterson AFB. Directorate researchers successfully demonstrated the systems during the base weather exercise "STRONGWIND O1."

Additional information

To receive more information about this or other activities in the Air Force Research Laboratory, contact TECH CONNECT, AFRL/XPTC, (800) 203-6451 and you will be directed to the appropriate laboratory expert. (02-SN-03)